

We claim:

- 1 1. An analyzer comprising:
2 a transport system;
3 a liquid dispense or aspirating station;
4 a holder removably located on the transport system, wherein the
5 removable holder comprises:
6 a probe tip dispenser;
7 a fluid supply section for holding a sample;
8 a test element recess for holding one or more test elements
9 or test element holders, wherein the removable holder is configured to
10 contain the test element recess such that a test element can be acted
11 upon by the liquid dispense or aspirating station, while the test element is
12 in the recess; and
13 a measurement device to analyze a sample.
- 1 2. An analyzer as claimed in claim 1, wherein the removable holder
2 arranges the probe tip dispenser, sample reservoir and test element recess on
3 the same line of travel to intersect the liquid dispense or aspirating station when
4 the removable holder is transported to the station by the transport system.
- 1 3. An analyzer as claimed in claim 1, wherein the transport system
2 comprises:
3 a first rotor for holding the removable holder; and second rotor arranged
4 concentrically with the first rotor and adapted to receive a test element from the
5 removable holder on the first rotor.

1 4. An analyzer as claimed in claim 3, wherein the removable holder
2 arranges the probe tip dispenser, sample reservoir and test element recess on
3 the same line of travel to intersect the liquid dispense or aspirating station when
4 the removable holder is transported to the station by the first rotor.

1 5. An analyzer according to claim 4, wherein the measurement device
2 is arranged to analyze a sample located in the second rotor; and further
3 comprising an incubator arranged in cooperation with the second rotor to
4 incubate a sample disposed in the second rotor.

1 6. An analyzer as claimed in claim 3, wherein the second rotor is
2 disposed within the first rotor.

1 7. An analyzer as claimed in claim 1, further comprising a waste
2 collection container located on the transport system for collecting used probe tips
3 and test elements.

1 8. An analyzer as claimed in claim 2, further comprising a waste
2 collection container located on the transport system for collecting used probe tips
3 and test elements, and wherein the waste collection container is arranged on the
4 line of travel.

1 9. An analyzer as claimed in claim 1, further comprising a centrifuge
2 module removably located on the transport system for separating a sample, and
3 wherein the centrifuge module is arranged on the line of travel.

1 10. An analyzer as claimed in claim 1, further wherein the removable
2 holder comprises at least two removable holders.

1 11. An analyzer as claimed in claim 10, wherein the at least two
2 removable holders include a first removable holder and a second removable
3 holder having different test elements.

1 12. An analyzer as claimed in claim 11, wherein the first removable
2 holder comprises a dry-slide test element and the second removable holder
3 comprises an immunoassay test reaction container.

1 13. An analyzer as claimed in claim 1, further comprising the test
2 element holder for holding the test element.

1 14. An analyzer as claimed in claim 13, wherein the test element holder
2 contains one or more of cup-shaped wells and test-strips.

1 15. An analyzer comprising:
2 a transport system;
3 a liquid dispense or aspirating station;
4 a removable centrifuge module removably located on the transport
5 system, wherein the centrifuge is adapted to receive a sample from the
6 liquid dispense or aspirating station; and
7 a measurement device to analyze a sample.

1 16. An analyzer as claimed in claim 15, wherein the removable
2 centrifuge module comprises a centrifuge cup and a base for rotatably supporting
3 the centrifuge cup.

1 17. An analyzer as claimed in claim 16, further comprising a centrifuge
2 station having a drive to engage and to provide rotary motion to the centrifuge
3 cup.

1 18. A method of transporting a probe tip, a liquid supply system for
2 containing a sample to be analyzed and a test element, to a subsystem in an
3 analyzer comprising:

4 providing the probe tip, liquid supply system and test element;
5 arranging the probe tip, sample reservoir and test element on a transport
6 system on the same line of travel of the transport system; and
7 moving the probe tip, sample reservoir and test element past the
8 subsystem.

1 19. A method as claimed in claim 18, wherein substantially no lateral
2 movement is required by the subsystem.

1 20. A method as claimed in claim 18, further comprising a removable
2 holder removably located on the analyzer transport system, wherein the
3 removable holder contains the probe tip, liquid supply system and test element.

1 21. A method as claimed in claim 20, wherein the transport system
2 comprises: a first rotor for holding the removable holder; and second rotor
3 arranged concentrically with the first rotor and adapted to receive the test
4 element from the first rotor.

1 22. A method of analyzing a sample comprising:
2 arranging a sample in a sample reservoir, at least one test element and a
3 probe tip on a first rotor on the same line of travel of a transport system; and

4 moving the transport system to align the probe tip with the proboscis of a
5 liquid dispense and aspirating station;
6 engaging the probe tip with the proboscis;
7 moving the transport system to align the sample reservoir with the liquid
8 dispense and aspirating station;
9 aspirating sample from the sample reservoir;
10 moving the transport system to align the test element with the liquid
11 dispense and aspirating station; and
12 dispensing the sample onto the test element, wherein the liquid dispense
13 and aspirating station has substantially no lateral movement.

1 23. A method as claimed in claim 22, further comprising:
2 incubating the test element;
3 moving the transport system to bring the test element into cooperation
4 with a measurement device; and
5 measuring the sample with the measurement device.

1 24. A method as claimed in claim 22, further comprising a removable
2 holder removably located on the analyzer transport system, wherein the
3 removable holder contains the probe tip, sample reservoir and test element.

1 25. A method of analyzing a sample comprising:
2 arranging a sample in a sample reservoir, at least one test element and a
3 probe tip on a first rotor on the same line of travel of the first rotor ;
4 rotating the first rotor to align the probe tip with the proboscis of a liquid
5 dispense and aspirating station;
6 engaging the probe tip with the proboscis;

7 rotating the first rotor to align the sample reservoir with the liquid dispense
8 and aspirating station;
9 aspirating sample from the sample reservoir;
10 rotating the first rotor to align the test element with the liquid dispense and
11 aspirating station;
12 dispensing the sample onto the test element, wherein the liquid dispense
13 and aspirating station has substantially no lateral movement;
14 rotating the first rotor to align the test element with a test element transfer
15 station;
16 transferring the test element to a second rotor;
17 incubating the test element;
18 rotating the second rotor to bring the test element into cooperation with a
19 measurement device; and
20 measuring the sample with the measurement device.

1 26. A method as claimed in claim 25, further comprising a removable
2 holder removably located on the analyzer transport system, wherein the
3 removable holder contains the probe tip; sample reservoir and test element.

1 27. A method as claimed in claim 25, wherein between the steps of
2 aspirating sample from the sample reservoir and rotating the first rotor to align
3 the test element with the liquid dispense and aspirating station the method further
4 comprises:

5 rotating the first rotor to align a centrifuge module with the liquid dispense
6 and aspirating station;

7 dispensing the sample into the centrifuge module, wherein the liquid
8 dispense and aspirating station has substantially no lateral movement;

9 rotating the first rotor to align the centrifuge module with a centrifuge
10 station;
11 engaging and rotating a centrifuge cup in the centrifuge module to
12 separate the sample;
13 rotating the first rotor to align the centrifuge module with the liquid
14 dispense and aspirating station; and
15 aspirating separated sample from the centrifuge module.

1 28. A method according to claim 18 implemented by a computer
2 program interfacing with a computer.

1 29. An article of manufacture comprising a computer usable medium
2 having computer readable program code configured to conduct the method of
3 claim 18.

1 30. A veterinary analyzer comprising an analyzer according to claim 1
2 and a T4 assay.

1 31. An analyzer according to claim 1, wherein the analyzer is a desktop
2 analyzer.